

REMARKS

Applicants respectfully request that the above-identified application be re-examined.

Initially, applicants would like to thank Examiner Gortayo for the courtesy shown to applicants' undersigned Patent Agent, Mr. Basrai, during an informal telephone interview on January 17, 2007. Mr. Basrai had telephoned Examiner Gortayo to clarify whether the shortened statutory period for reply to the Office Action mailed December 15, 2006 (hereinafter "Office Action") set to expire 4 months, as set forth in the Office Action, from the mailing date of the Office Action, or set to expire 3 months from the mailing date of the Office Action. Examiner Gortayo explained that the 4 months shortened statutory period set forth in the Office Action was a typographical error. Accordingly, Examiner Gortayo clarified that the shortened statutory period is set to expire 3 months from the mailing date of the Office Action.

Mr. Basrai also requested clarification regarding the remarks on pages 2 and 3 of the Office Action pertaining to the 35 U.S.C. § 112, second paragraph, rejection of Claim 1, and the 35 U.S.C. § 101 rejection of Claims 1-5, 7-11, and 13-14, respectively. Mr. Basrai explained why both of the aforementioned rejections were incorrect. In particular, Mr. Basrai pointed out that since "a behavior" on line 12 of Claim 1 is the first instance of the behavior, there is sufficient antecedent basis for this limitation. Further, the aforementioned limitation is adequately clear as to what the limitation is referring to, i.e., the limitation is referring to at least one provider component configured with the aforementioned behavior. It is applicants' understanding that Examiner Gortayo agreed that the 35 U.S.C. § 112, second paragraph, rejection of Claim 1 was indeed an error.

With regards to the 35 U.S.C. § 101 rejection of independent Claim 1, Mr. Basrai inquired as to the basis of the aforementioned rejection in light of the remarks on page 3, which state: "There is no following step that shows a result of the computerized system and the provider-plugin. Therefore, the claim is rendered non-statutory. Proper correction is required."

Mr. Basrai explained that since Claim 1 recites a "system claim", there is no requirement to show a result of the computerized system and the provider plug-in, only how to achieve the result. Again, it is applicants' understanding that Examiner Gortayo agreed that the 35 U.S.C. § 101 rejection of Claim 1 (and hence the 35 U.S.C. § 101 rejection of Claims 2-5 and 7-11, which depend directly or indirectly from Claim 1) was indeed an error.

With regards to the 35 U.S.C. § 101 rejection of independent Claim 13, Mr. Basrai inquired as to the basis of the aforementioned rejection in light of the remarks on page 3, which state: "There is no following step that shows a result of a query from the storage medium. Therefore the claim is rendered non-statutory. Proper correction is required." Examiner Gortayo explained the reason for the 35 U.S.C. § 101 rejection of independent Claim 13. In particular, Examiner Gortayo explained that even though Claim 13 recited a method comprising (a) instantiating a first query component in a plurality of query components of an object-oriented heterogeneous data store interface, (b) adding a query expression to the first query component with the add expression behavior of the first query component, and (c) providing the first query component to a data store component of the object-oriented heterogeneous data store interface, there was no clarifying reason for performing the aforementioned method. Even though Mr. Basrai disagreed by pointing out that there was no requirement to show a result of a query from the storage medium, only the steps to produce such a result, applicants have made a clarifying amendment to the preamble of Claim 13 in the interest of advancing the prosecution of the present application. It is applicants' understanding that the aforementioned amendment may be entered if the amendment does not change the scope of the claim. Applicants request that the aforementioned clarifying amendment be entered since the clarifying amendment is made to the preamble of the claim, and hence does not alter the scope of the claim. Accordingly, the 35 U.S.C. § 101 rejection of Claim 13 (and hence the 35 U.S.C. § 101 rejection of Claim 14, which depends from Claim 13) has been rendered moot.

Claims 1-31 remain in the present application. The Office Action rejected Claims 23-28 under 35 U.S.C. § 102(e) as being unpatentable over U.S. Patent No. 6,792,431, issued to Tamboli et al. ("Tamboli"). In addition, the Office Action rejected Claims 1-12 and 29-31 under 35 U.S.C. § 103(a) as being unpatentable over Tamboli in view of U.S. Patent No. 6,985,905 B2, issued to Prompt et al. ("Prompt"). The Office Action also rejected Claims 13-22 under 35 U.S.C. § 103(a) as being unpatentable over Prompt in view of Tamboli. Applicants respectfully disagree.

Prior to discussing in detail why applicants believe that all of the claims in the present application are allowable in view of the cited and applied references, a brief description of the disclosed subject matter and a brief description of the teachings of the cited and applied references are provided. The following discussions of the disclosed subject matter and the cited and applied references are not provided to define the scope or interpretation of any of the claims of this application. Instead, these discussions are provided to help the United States Patent and Trademark Office better appreciate important claim distinctions discussed thereafter.

Disclosed Subject Matter

One or more data stores, each of a different type, that store one or more data objects are disclosed. Further, an object-oriented heterogeneous data store interface for interacting with the data stores is also disclosed. The object-oriented heterogeneous data store interface includes a query component and a provider interface that specifies a query behavior with a query component parameter for provider components. For each type of data store, there is a provider plug-in to the object-oriented heterogeneous data store interface. Each provider plug-in includes one or more provider components that conform to the provider interface.

According to an exemplary embodiment, the query component of the object-oriented heterogeneous data store interface is instantiated. Each query component has an add expression behavior with at least one query term parameter and a query operator parameter. A query

expression is added to the instantiated query component with the add expression behavior of the query component. The query component is provided to a data store component of the object-oriented heterogeneous data store interface.

According to another exemplary embodiment, the object-oriented heterogeneous data store interface includes one or more data store object components corresponding to data objects stored in the data stores. A data store object design graphical user interface (GUI) is utilized to build graphical representations of data objects. A data store object source code generator generates object-oriented programming language source code for each data store object component of the object-oriented heterogeneous data store interface.

Tamboli

Tamboli purportedly discloses data integration including extracting a first native record with a first native format from a first native repository through a first adapter. The first adapter is loosely coupled for data integration to a data integration application. The first native format has a particular datatype which transforms the first native record with the first native format to a first native record with a dynamic common format. The dynamic common format is a subset of a dynamic common model. The dynamic common model comprises mappings to and from the dynamic common format for all native records in all datatypes, transforming the format of the first native record with a dynamic common format to a first native record with a second native format, and inserting, through a second adapter, also loosely coupled to the data integration application, the first native record with the second native format into a second native repository.

Prompt

Prompt purportedly discloses a hierarchical/relational translation system for enabling information from unrelated heterogeneous relational computing systems to be accessed, navigated, searched, browsed, and shared over a hierarchical computing system. In one exemplary embodiment, the hierarchical/relational translation system includes a virtual directory

server for capturing information compliant with the nature of relational database schema and metadata. The captured schema and metadata are then translated into virtual directories that are universally compatible with standard communication protocols used with hierarchical computing systems. A virtual directory of information organizes an index of data records and a standard addressing schema is provided to enable customizable access to relevant views of relational computing systems. Several embodiments for presenting the virtual directory information tree are included. In another exemplary embodiment, the virtual directory is displayed using a browser format or an electronic mail format. In yet another exemplary embodiment, the virtual directory is presented over a wireless medium and through portable devices.

Claim Rejections Under 35 U.S.C. § 102(e)

As noted above, the Office Action rejected Claims 23-28 under 35 U.S.C. § 102(e) as being unpatentable over Tamboli. Applicants respectfully disagree. Independent Claim 23 reads as follows:

23. A computerized system, comprising:
at least one data store, each data store comprising a different data store type, each data store capable of storing at least one data store object;
an object-oriented heterogeneous data store interface comprising at least one data store object component corresponding to at least one of said at least one data store object stored in said at least one data store;
a data store object design graphical user interface configured to enable building of a graphical representation of each data store object corresponding to at least one data store object component of the object-oriented heterogeneous data store interface; and
a data store object source code generator capable of generating object-oriented programming language source code for each data store object component of the object-oriented heterogeneous data store interface.

Applicants submit that Tamboli does not teach each and every limitation of Claim 23. Initially, from the remarks accompanying the rejection of Claim 23 on pages 4-5 of the Office Action, it is applicants' understanding that the Office Action appears to equate: (i) "object-

oriented heterogeneous data store interface," recited in Claim 23, with "data integration application", i.e., item 116 in Figure 1, of Tamboli, (ii) "data store object component," recited in Claim 23, with "user interface", i.e., item 244 in Figure 1, of Tamboli, and (iii) "data store object stored in at least one data store," recited in Claim 23, with "data stored in first native repository or second native repository," i.e., items 106 or 134 in Figure 1, of Tamboli. Applicants disagree. Applicants submit that Tamboli does not teach the Claim 23 recitation: "an object-oriented heterogeneous data store interface comprising at least one data store object component corresponding to at least one of said at least one data store object stored in said at least one data store." In this regard, Col. 13, lines 15-26 of Tamboli state:

In overview therefore of typical operation, a user requests through a user interface (244) identification information for a datatype, passing to the user interface search parameters (250). The user interface searches (248, 246) a catalog (202) and returns for display logical identifying attributes (252) fitting the user's request. The user interface then supports various sorting and selecting functions (254) on behalf of the user, including enabling the user affirmatively to indicate which data records are to be transferred and the destinations of the transfers. The user's last act before transfer is to instruct the user interface to begin transfer (256). The user interface then, in typical embodiments, writes a catalog key into a transfer cart (242), one key for each transfer record.

In other words, the user interface is a location where user requests from a user workstation are collected. The collected user requests are forwarded to the catalog. Results from the catalog, i.e., logical identifying attributes fitting the user's request, are returned to the user interface for display, i.e., no object-oriented programming language source code is used to "generate" the data. The user interface supports various functions on behalf of the user, including a function that enables the user to indicate, based on the results received from the catalog, which data from which native repository is to be transferred to which destination repository. When the user interface is instructed by the user to transfer the indicated data, the user interface writes a catalog key into a transfer cart. There is no teaching in the

aforementioned section or anywhere else in Tamboli that the user interface corresponds to data stored in at least one native repository. Thus, Tamboli does not teach or suggest the Claim 1 recitation: "an object-oriented heterogeneous data store interface comprising at least one data store object component corresponding to at least one of said at least one data store object stored in said at least one data store."

The Office Action incorrectly contends that since Tamboli purportedly discloses a user interface in a data integration application that communicates with adaptors to read data from multiple data repositories, Tamboli teaches or suggests the Claim 1 recitation: "an object-oriented heterogeneous data store interface comprising at least one data store object component corresponding to at least one of said at least one data store object stored in said at least one data store." Applicants submit that the Tamboli's user interface does not communicate with the adaptors.

For example, Col. 8, lines 27-29, of Tamboli state:

'Adapters' are implementations of interfaces between native repositories and other elements of embodiments, particularly transfer managers and spiders...

and Col. 8, lines 51-53, of Tamboli state:

Adapters in typical embodiments are loosely coupled to data integration applications including transfer managers, transformation services, and spiders...

and Col. 16, line 65, through Col. 17, line 2, of Tamboli states:

In the illustrated example embodiment, the single native repository (502) is coupled (505) for data communications to an adapter (504), and the adapter (504) is coupled (503) for data communications to a data integration application (116). The illustrated the [sic] data integration application (116) includes the spider (518).

Further, Figure 1 of Tamboli clearly shows that user interface (244) communicates with the work station (258), the transfer cart (242), and the catalog (202). The catalog via the catalog

adapter and various components of the transfer manager (208) communicates with the first (102) and second (124) adapters, and the transfer cart (242) via the various components of the transfer manager (208) communicates with the first (102) and second (124) adapters. Thus, Tamboli does not teach the Claim 23 recitation: "an object-oriented heterogeneous data store interface comprising at least one data store object component corresponding to at least one of said at least one data store object stored in said at least one data store."

Further, the Office Action remarks do not clearly equate anything in Tamboli with "data store object design graphical user interface" and a "data store object source code generator." Remarks accompanying the rejection of the portion of Claim 23 that recites: "a data store object design graphical user interface configured to enable building of a graphical representation of each data store object corresponding to at least one data store object component of the object-oriented heterogeneous data store interface" state that Col. 12, line 8, through Col. 13, line 26, of Tamboli, wherein a user interface (i.e., data store object component) displays data in data repositories teaches the aforementioned portion of Claim 23. Similarly, the remarks accompanying the rejection of the portion of Claim 23 that recites: "a data store object source code generator capable of generating object-oriented programming language source code for each data store object component of the object-oriented heterogeneous data store interface" state that Figure 5 and 9, and Col. 16, line 40, through Col. 17, line 67, of Tamboli, wherein data is created that represents individual data in the data repositories, by the adapter and by a spider teaches the aforementioned portion of Claim 23. There is no teaching in the remarks or the cited sections and drawing figures of Tamboli that teach the aforementioned portions of Claim 23.

Since Tamboli does not teach a data store object design graphical user interface and a data store object source code generator, and no object-oriented programming language source code is used to "generate" the data, Tamboli further fails to teach the Claim 23 recitations: "a data store object design graphical user interface configured to enable building of a graphical

representation of each data store object corresponding to at least one data store object component of the object-oriented heterogeneous data store interface", and "a data store object source code generator capable of generating object-oriented programming language source code for each data store object component of the object-oriented heterogeneous data store interface."

Since Tamboli fails to teach each and every limitation of Claim 23, Claim 23 is incorrectly rejected under 35 U.S.C. § 102(e) as being unpatentable over Tamboli. Accordingly, applicants respectfully request the withdrawal of the rejection of Claim 23 based on Tamboli, and the allowance of Claim 23. Further, since Claims 24-28 depend directly or indirectly from Claim 23, applicants respectfully submit that Claims 24-28 are also allowable due to their dependency from an allowable base claim. Accordingly, applicants respectfully also request the withdrawal of the rejection of Claims 24-28 and the allowance of Claims 24-28.

Claim Rejections Under 35 U.S.C. § 103(a): Tamboli in view of Prompt

As noted above, Claims 1-12 and 29-31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tamboli in view of Prompt. Applicants respectfully disagree. Independent Claim 1 reads as follows:

1. A computerized system, comprising:
 - at least one data store, each data store comprising a different data type configured to store at least one data store object;
 - an object-oriented heterogeneous data store interface comprising:
 - a data store component corresponding to each data store;
 - a query component comprising a query specification attribute; and
 - a provider interface comprising a query component behavior specification specifying a query behavior with said query specification attribute of said query component; and
 - for each data store, a provider plug-in to the object-oriented heterogeneous data store interface, and each provider plug-in comprises at least one provider component configured with a behavior conforming to the query component behavior specification of the provider interface.

As shown above with respect to Claim 23, Tamboli fails to teach the Claim 1 recitation: "an object-oriented heterogeneous data store interface comprising a data store component corresponding to each data store." Prompt does not make up for this deficiency.

Further, Tamboli fails to teach or suggest the portion of the Claim 1 recitation: "each provider plug-in comprises at least one provider component configured with a behavior conforming to the query component behavior specification of the provider interface." More specifically, the Office Action cites references 102, 124, and 204 in Figure 1 of Tamboli as teaching or suggesting this recitation. Applicants disagree. Col. 14, lines 47-51, of Tamboli state:

A further embodiment illustrated in FIG. 2 includes transforming (114), through the first adapter (102), the format of the first native record (108) having the first native format to a first native record having a dynamic common format...

and Col 14, lines 59-65, of Tamboli state:

A further embodiment, illustrated also in FIG. 2, includes transforming (126), through a second adapter (124), the format of the first native record (122) having the dynamic common format to a first native record having a second native format of a second native repository (134), the second native format belonging to a category of formats identified as datatypes (110)...

and Col. 16, lines 50-53, of Tamboli state:

The example embodiment of FIG. 9 also includes inserting (912) the new proxy data (908) and identifying attributes (910) through a catalog adapter (204) into a catalog (202).

The aforementioned sections and Figure 1 of Tamboli clearly show that the first adapter 102 and second adapter 124 are used to transform the format of a record from one format to another. The catalog adapter 204 is used as a conduit for inserting data into the data integration application. There is no teaching in the aforementioned sections and drawing figure, or anywhere else in Tamboli, of the adapters comprising a component configured with a behavior

conforming to the query specification of the adapter interface. Rather, the provider interfaces (items 220 and 222, 224 and 226, and 228 and 230 in Figure 1 of Tamboli) are made to conform to the adapter to which the interfaces are connected. Again, Prompt does not make up for this deficiency.

As specified by M.P.E.P. § 2143.03, "To establish *prima facie* obviousness of a claimed invention, **all** the claim limitations must be taught or suggested by the prior art (emphasis added). *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). 'All words in a claim must be considered in judging the patentability of that claim against the prior art.' *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)."

Accordingly, the 35 U.S.C. § 103(a) rejection of Claim 1 is submitted to be in error. Applicants respectfully request the withdrawal of the rejection of Claim 1, and the allowance of Claim 1.

Further, since Claims 2-12 depend directly or indirectly from independent Claim 1, and Claims 29-31 depend directly or indirectly from independent Claim 23, applicants submit that Claims 2-12 and 29-31 are allowable for at least their dependency on an allowable base claim. Accordingly, applicants respectfully request the withdrawal of the rejection of Claims 2-12 and 29-31 and the allowance of Claims 2-12 and 29-31.

Claim Rejections Under 35 U.S.C. § 103(a): Prompt in view of Tamboli

As noted above, Claims 13-22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Prompt in view of Tamboli. Applicants respectfully disagree. As amended, independent Claim 13 reads as follows:

13. A computer-readable storage medium having stored thereon computer-executable instructions for performing a method for a

query component to specify a particular subset of a data store component comprising:

instantiating a first query component in a plurality of query components of an object-oriented heterogeneous data store interface, each query component of the object-oriented heterogeneous data store interface having an add expression behavior, the add expression behavior having:

at least one query term parameter; and

a query operator parameter;

adding a query expression to the first query component with the add expression behavior of the first query component; and

providing the first query component to a data store component of the object-oriented heterogeneous data store interface.

Applicants submit that Prompt and Tamboli do not teach each and every limitation of Claim 13. In particular, Prompt does not teach or suggest the Claim 13 recitation: "instantiating a first query component in a plurality of query components of an object-oriented heterogeneous data store interface, each query component of the object-oriented heterogeneous data store interface having an add expression behavior." Nor does Tamboli teach or suggest this subject matter.

Applicants note that the Office Action appears to equate "requests 201" in Prompt to the Claim 13 recitation: "plurality of query components." Applicants disagree. In this regard, Col. 19, lines 20-24 and lines 37-41, of Prompt states in part:

...receives requests 201 from hierarchical computing system 102...this request 201 will be an Information Resource Locator (IRL, that is, an LDAP URL)...receiving requests from the hierarchical computing system 102 and for breaking down (i.e., decomposing) any commands embedded within the requests.

Nowhere in Prompt are the "commands" specifically taught. Accordingly, nowhere does Prompt teach that the commands embedded within the requests, i.e., each query component of the object-oriented heterogeneous data store interface, include an "add expression behavior" command as recited in Claim 13.

Since Prompt fails to teach the aforementioned recitation of Claim 13, Prompt fails to teach the Claim 13 recitation: "the add expression behavior having at least one query term

parameter, and a query operator parameter." The Office Action also incorrectly states that since a query includes a request **for** a query unit (emphasis added) is taught by Prompt, Prompt teaches the Claim 13 recitation: "the add expression behavior having at least one query term parameter." In this regard, Col. 19, lines 19-24, of Prompts state:

In particular, a forward translation unit 202 receives requests 201 from hierarchical computing system 102, and provides a request **to** a query unit 206 (emphasis added). In one embodiment to be described subsequently, this request 201 will be an Information Resource Locator (IRL, that is, an LDAP URL).

The aforementioned section of Prompt clearly shows that the request is *to* a query unit and not *for* a query unit. In fact, the request *to* the query unit is *for* a Information Resource Locator.

Prompt also does not teach the Claim 13 recitation: "adding a query expression to the first query component with the add expression behavior of the first query component." The Office Action reasons that since "wherein a query generator assembles a query to database" is taught by Prompt, Prompt teaches the Claim 13 recitation: "adding a query expression to the first query component with the add expression behavior of the first query component." Applicants are confused with the reasoning. Col. 29, lines 4-15, of Prompt stated in the Office Action where the aforementioned reasoning is found clearly shows that the query generator 206 can assert the database query on database 106 once the appropriate database query is generated. Asserting a query on a database is not the same as adding a query expression to the query. In other words, asserting a query on a database is not the same as "adding a query expression to the first query component with the add expression behavior of the first query component," as recited in Claim 13.

In conclusion, Prompt fails to teach the Claim 13 recitations: "instantiating a first query component in a plurality of query components of an object-oriented heterogeneous data store

interface, each query component of the object-oriented heterogeneous data store interface having an add expression behavior," "the add expression behavior having at least one query term parameter, and a query operator parameter," and "adding a query expression to the first query component with the add expression behavior of the first query component." This subject matter is also not taught by Tamboli.

Applicants agree with the Office Action concession that Prompt fails to teach the Claim 13 recitation: "providing the first query component to a data store component of the object-oriented heterogeneous data store interface." The Office Action states that since "wherein a user interface in a data integration application communicates with adapters to read data from multiple data repositories" is taught by Tamboli, Tamboli teaches the Claim 13 recitation: "providing the first query component to a data store component of the object-oriented heterogeneous data store interface." As shown with respect to Claim 23, the user interface in Tamboli does not communicate with the adapters in order to read data from multiple data repositories. Accordingly, Tamboli, like Prompt, fails to teach the Claim 13 recitation: "providing the first query component to a data store component of the object-oriented heterogeneous data store interface."

As specified by M.P.E.P. § 2143.03, "To establish *prima facie* obviousness of a claimed invention, **all** the claim limitations must be taught or suggested by the prior art (emphasis added). *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). 'All words in a claim must be considered in judging the patentability of that claim against the prior art.' *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)."

Accordingly, the 35 U.S.C. § 103(a) rejection of Claim 13 is submitted to be in error. Applicants respectfully request the withdrawal of the rejection of Claim 13 and the allowance of Claim 13.

Further, since Claims 14-22 depend directly or indirectly from independent Claim 13, applicants submit that Claims 14-22 are allowable for at least their dependency on an allowable base claim. Accordingly, applicants respectfully request the withdrawal of the rejection of Claims 14-22 and the allowance of Claims 14-22.

CONCLUSION

In view of the foregoing remarks, applicants respectfully submit that the above-identified application is in condition for allowance. Re-consideration and re-examination of the application and allowance of the claims (Claims 1-31) at an early date are solicited. If the Examiner has any questions or comments concerning this matter, the Examiner is invited to contact the undersigned at the number provided below.

Respectfully submitted,

CHRISTENSEN O'CONNOR
JOHNSON KINDNESS^{PLLC}



Hundid Basrai
Patent Agent
Registration No. 53,973
Direct Dial No. 206.695.1668

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